

REMARKS

Claims 45-98 are pending in the present application. Claims 63-83 and 85-98 have been withdrawn from consideration by the Examiner.

Claim 47 has been amended to correctly refer to the thermosetting composition instead of coating composition. Claims 59 and 60 have been amended to correctly refer to ethylenically unsaturated acceptor monomers.

Restriction/Election

The Examiner identified three inventions in her restriction requirement under 35 U.S.C. § 121:

- I. Claims 45-62 and 84, drawn to a thermosetting composition, classified in class 525, subclass 123+.
- II. Claims 63-83, drawn to a method of coating, classified in class 427, subclass 372.2.
- III. Claims 85-98, drawn to a method of electro coating, classified in class 204, subclass 192.1+.

In addition to the further reasons for traversing the restriction requirement, Applicants traverse the restriction requirement on the grounds that the restriction is unduly expensive and burdensome on Applicants, requiring the possible filing of three or more divisional applications directed to the non-elected inventions while, at the same time, presenting little, if any, burden to the Patent Office.

As MPEP § 803 states, "If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to distinct or independent inventions."

Because the present claims are related as compositions and uses of those compositions, they can be more efficiently and effectively searched as a single group while not placing an undue burden on the Examiner.

Should the Examiner be unpersuaded by Applicants' arguments, Applicants affirm the election of Group I be examined on the merits.

Rejections Under 35 U.S.C. § 112

Claims 47, 59 and 60 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

In claim 47, the Examiner indicates that "said coating composition" lacks antecedent basis. The objectionable language in claim 47 has been amended to read "said thermosetting composition."

In claim 59 and 60, the Examiner indicates that it is not clear to which monomers "ethylenically unsaturated monomers" refers. The objectionable language in claims 59 and 60 has been amended to read "ethylenically unsaturated acceptor monomers."

As the rejections have been addressed, the rejections should be withdrawn.

35 U.S.C. §/103(a) and Double Patenting Rejections

Claims 42-62 and 84 stand rejected under 35 U.S.C. § 103(a) as being obvious over United States Patent No. 6,191,225 to Barkac et al. (hereinafter "Barkac"). Applicants respectfully request reconsideration.

The present invention is directed to a thermosetting composition that includes:

- (a) a first reactant containing functional groups;
- (b) a crosslinking agent having at least two functional groups that are reactive with the functional groups first reactant in (a); and

- (c) a copolymer flow control agent that includes a copolymer having at least 30 mol % of segments containing alternating residues derived from a donor monomer selected from isobutylene, diisobutylene, dipentene and isoprenol, and an ethylenically unsaturated acceptor monomer. The copolymer is substantially free of maleate-type monomer segments and fumarate-type monomer segments and the copolymer flow control agent is substantially free of Lewis acids and transition metals.

Barkac discloses a thermosetting composition that includes a co-reactable solid, particulate mixture of (a) polycarboxylic acid functional polymer, and (b) epoxy functional polymer. The polycarboxylic acid functional polymer and epoxy functional polymer are each prepared by atom transfer radical polymerization (ATRP) and have well-defined

polymer chain architecture and polydispersity index of less than 2.5 (abstract). A separate flow control additive can be used in the thermosetting composition (col. 20, lines 9-10 and 20-24; col. 22, lines 3-6; and Table 2 bridging cols. 25 and 26).

As a first matter, Barkac does not disclose thermosetting compositions containing the present alternating copolymer flow control additive. In Barkac, the ATRP-derived polymers are incorporated in the thermosetting composition as resinous binders and not as flow control additives, so the use of the present alternating copolymer as a flow control additive is not disclosed or suggested in Barkac.

As a second matter, Barkac does not disclose the present alternating copolymer. Barkac does disclose that the described ATRP method can be used to polymerize isobutylene, diisobutylene, acrylic monomers and maleic anhydride. Barkac also discloses that the ATRP method can be used to make alternating copolymers. However, Barkac does not disclose or teach making the present maleic-free copolymers containing at least 30 mol % of segments containing alternating residues derived from a donor monomer selected from isobutylene, diisobutylene, dipentene and isoprenol, and an ethylenically unsaturated acceptor monomer.

For example, isobutylene and diisobutylene are species that are used to remove the terminal hydrogen (col. 14, line 51 to col. 16, line 5). Thus, while Barkac discloses isobutylene and diisobutylene as potential monomers, it also

discloses that they can remove the radically transferable group and terminate polymerization. Such a monomer would not be expected by one skilled in the art to be part of at least 30 mol % of the alternating copolymer.

Further, the method taught to make polymers with a controlled composition in Barkac involves charging one monomer, allowing it to react and then charging the second monomer (see example C, col. 24, line 20-67). As one skilled in the art would readily recognize, in order to make an alternating copolymer by this method, one would have to add a first monomer, allow it to react, add a second monomer, allow it to react, add the first monomer again, and so on. Making an alternating copolymer by this method is highly unlikely as the monomers will react randomly, resulting in the same monomer often being next to each other (non-alternating).

Barkac does not provide any teaching as to how to make alternating copolymers from mild donor and mild acceptor monomers as in the present invention.

The problem was solved in the present invention, as the claimed alternating copolymers are prepared by providing one or more of the claimed donor monomers and adding an ethylenically unsaturated acceptor monomer to the donor monomer in the presence of a free radical polymerization initiator. The donor monomer is typically used in excess and the monomer solutions and resulting copolymer composition are substantially free of maleate-type monomers, fumarate-type

monomers, Lewis acids and transition metals (page 19 of the specification).

Barkac does not disclose how to make the claimed alternating copolymer and, therefore, does not enable such an alternating copolymer as the ATRP polymers used in the disclosed thermosetting composition.

Finally, although the Examiner suggests that Barkac discloses removing the ATRP catalyst from the resulting product mixture, there is no disclosure in Barkac to indicate that the method is sufficient to prevent poor stability when exposed to UV light, discoloration or shortened shelf-life (page 6).

Further, the present invention overcomes problems in the ATRP method as it avoids the expensive and time consuming clean up to remove the transition metal salt and/or Lewis acid residues in order to make the polymer commercially useful.

For all of the reasons stated above, Barkac does not disclose or suggest the claimed alternating copolymer or its use as a flow control additive in thermosetting compositions.

As such, the rejection of claims 42-62 and 84 under 35 U.S.C. § 103(a) should be withdrawn.

Double Patenting Rejection

Claims 45, 46 and 49-62 stand rejected under the judicially created doctrine of obviousness-type double patenting. Applicants request that the Examiner hold the double patenting rejection in abeyance until such time as the

present claims are allowed. At that time Applicants intend to file a proper Terminal Disclaimer to remove the rejection.

CONCLUSION

Applicants believe that claims 42-62 and 84 are in form for allowance.

In view of the above amendments and remarks, reconsideration of the rejections and allowance of claims 42-62 and 84 are respectfully requested.

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The Examiner is encouraged to contact the above should there be any questions regarding this Amendment.

Respectfully submitted,

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